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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,408	03/26/2004	Yasuhiro Yoneda	Q91048	7570
23373	7590	06/22/2007		
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER LAZORCIK, JASON L	
			ART UNIT 1731	PAPER NUMBER
			MAIL DATE 06/22/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/809,408	<b>Applicant(s)</b> YONEDA ET AL.	
	<b>Examiner</b> Jason L. Lazorcik	<b>Art Unit</b> 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 3,4 and 6-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of the method of manufacturing a molded article defined by claims 1, 2, and 5 in the reply filed on April 23, 2007 is acknowledged.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1 and 2** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sato (US 5,228,894).

Sato teaches a method for press-forming a molded optical element from a heat softened molding materials in a precision molding apparatus (see Fig 3) having a pair of pressing molds with respective molding surfaces processed to prescribed shapes. The Sato process may be broken down into three steps with a first step of heating the glass material to working temperature, a second step of deforming and molding the heated material, and a third stage of cooling the molded glass to an appropriate viscosity range for removal from the molding apparatus.

The reference specifically discloses that during this third cooling stage of the press forming operation the molded glass product shrinks due to thermal contraction. Sato continues by teaching that "If the molds can not follow the shrinkage at the that time, discontinuous surfaces are produced on the surfaces of the formed product, adversely influencing...optical properties of the formed product". Further, the reference discloses that "Accordingly, it is necessary to optimize the functioning pressure and the functioning temperature range of a second pressing means which follows the above described volume shrinkage."

Specifically regarding this optimization step, Sato teaches that the mold cooling rate may be set in accord with "the required quality of the formed optical element" and other predetermined characteristics of the molding system (Column 10, Lines 51-54). Since the rate of volumetric contraction of the molded glass element is directly correlated to the rate of cooling, the rate of approach between the upper and lower mold surfaces must be controlled to maintain contact with the glass surface and a desired compressive pressure. Specifically Sato teaches that "In order to transfer the shapes of the forming surfaces of the molds to an optical element with the required accuracy when the volume of the glass perform shrinks during the cooling process, it is necessary to control a second press-forming by the pushing cylinder mechanism (205)." (Column 11, lines 1-4).

In the event that Applicant argues that Sato does not anticipate measuring and correcting steps of the identified claims, it is the Examiners position that the prior art renders the claimed process obvious under 35 U.S.C. 103(a).

"[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."; see *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation (See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) and *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977)). In the instant case, optical properties of the optical element are directly correlated with the "functioning pressure" of the mold during the cooling step. The linear pressing speed or "pressing rate" at least one pressing mold must be adapted to maintain a controlled compressive pressure upon the molded glass element during the cooling step. Therefore "pressing rate" is deemed a result-effective variable of the optical properties of the molded article. Since optimization of this result effective variable would be undertaken through routine experimentation, the immediate claim of "correcting the pressing rate of at least one of the pressing molds based on the optical property thus measured" is obvious over the prior art.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (US 5,228,894).

Sato teaches that the controlled pressure and temperature ramp undertaken in the cooling phase of the molding process promotes the formation of a precision surface and alleviates adverse optical properties of the formed product. Sato indicates adverse optical properties in general and specifically those anomalies which arise due to "discontinuous surfaces ...produced on the surfaces of the formed product". It is the Examiners understanding that spherical aberrations specifically relate to the problem where a lens not shaped correctly (e.g. discontinuous surface), so the light from the center is focused at a different location than the light from the edges.

Although Sato may not specifically require a step of correcting the lens with respect to a "spherical aberration" as claimed, it is the Examiners position that such a correction is either implied by the Sato reference or would have presented a merely obvious extension over the prior art teachings for one of ordinary skill in the art at the time of the invention.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The reference to Habeck et. al. clearly sets forth the relationship between rate of axial compression (e.g. compressive stress) of a molten glass article and the resultant anisotropic optical properties of the molded article. Of particular interest to the instant application, Habeck relates that "the glass melts investigated show non-newtonian flow behaviour at high deformation rates due to alteration of the isotropic structure to an anisotropic structure. If this anisotropic state is frozen-in by a controlled cooling process under constant load, the glass samples show a permanent frozen –in birefringence". (see Abstract, pg 227, Fig 8, and pg 236 – conclusions). This disclosure teaches that the relationship between pressing rate and measured optical properties of a molded glass element are well appreciated in the art. Any reply to the instant office action should carefully consider the scope of material presented in this article.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Lazorcik whose telephone number is (571) 272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1731

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JLL

  
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